

AMENDMENTS

In the claims:

Please enter the following amendments:

1. **(Currently Amended)** A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes a far red shifted **Stichodactylidaen** ~~Stichodactylidaen~~ chromoprotein or fluorescent mutant thereof
2. **(Original)** The nucleic acid according to Claim 1, wherein said nucleic acid is isolated.
3. **(Previously Presented)** A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes a fluorescent protein having an emission maximum ranging from about 620 to 680 nm.
4. **(Original)** The nucleic acid according to Claim 3, wherein said nucleic acid is isolated.
5. **(Previously Presented)** A nucleic acid present in other than its natural environment having a sequence similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27.
6. **(Previously Presented)** The nucleic acid according to Claim 5, wherein said sequence similarity is at least about 90%.
7. **(Currently Amended)** A fragment of the nucleic acid selected from the group consisting of:
 - (a) a nucleic acid that encodes a far red shifted **Stichodactylidaen** ~~Stichodactylidaen~~ chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and

(c) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;

wherein said fragment encodes a fluorescent product and is present in other than its natural environment.

8. **(Currently Amended)** An isolated nucleic acid or mimetic thereof that hybridizes under stringent conditions to a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes a far red shifted **Stichodactylidaen** ~~Stichodactylidaen~~ chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and

(c) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;;

or its complementary sequence, **wherein said stringent conditions are at least as stringent as hybridization at about 50°C and about 0.1xSSC.**

9. **(Currently Amended)** A construct comprising a vector and a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes a far red shifted **Stichodactylidaen** ~~Stichodactylidaen~~ chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and

(c) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27.

10. **(Currently Amended)** An expression cassette comprising:
- (a) a transcriptional initiation region functional in an expression host;
 - (b) a nucleic acid selected from the group consisting of the nucleic acids of:
 - (i) a nucleic acid that encodes a far red shifted **Stichodactylidaen**
~~Stichodactylidaen~~ chromoprotein or fluorescent mutant thereof;
 - (ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and
 - (iii) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27; and
 - (c) and a transcriptional termination region functional in said expression host.
11. **(Original)** A cell, or the progeny thereof, comprising an expression cassette according to Claim 10 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.
12. **(Currently Amended)** A method of producing an ~~Anthezoan~~ **Anthozoan** chromo and/or fluorescent protein, said method comprising:
growing a cell according to Claim 11, whereby said protein is expressed; and
isolating said protein substantially free of other proteins.

Please cancel claims 13-17.

13.-17. **(Canceled)**

18. **(Currently Amended)** In an application that employs a nucleic acid encoding a chromo- or fluorescent protein, the improvement comprising:
employing a nucleic acid selected from the group consisting of:
- (i) a nucleic acid that encodes a far red shifted **Stichodactylidaen**
~~Stichodactylidaen~~ chromoprotein or fluorescent mutant thereof;

- (ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and
- (iii) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27.

19. **(Currently Amended)** A kit comprising:
- a nucleic acid selected from the group consisting of:
- (i) a nucleic acid that encodes a far red shifted *Stichodactylidaen* ~~*Stichodactylidaen*~~ chromoprotein or fluorescent mutant thereof;
 - (ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and
 - (iii) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27; and
- instructions for using said nucleic acid.

Please add new claims 20-24.

20. **(New)** A fragment of the nucleic acid selected from the group consisting of:
- (a) a nucleic acid that encodes a far red shifted *Stichodactylidaen* chromoprotein or fluorescent mutant thereof;
 - (b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and
 - (c) a nucleic acid having a sequence of similarity of at least about 75% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;
- wherein said fragment encodes a fluorescent product and is present in other than its natural environment.

21. **(New)** An isolated nucleic acid or mimetic thereof that hybridizes under stringent

conditions to a nucleic acid selected from the group consisting of:

- (a) a nucleic acid that encodes a far red shifted *Stichodactylidaen* chromoprotein or fluorescent mutant thereof;
- (b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and
- (c) a nucleic acid having a sequence of similarity of at least about 75% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;;

or its complementary sequence, wherein said stringent conditions are at least as stringent as hybridization at about 50°C and about 0.1xSSC.

22. **(New)** A construct comprising a vector and a nucleic acid selected from the group consisting of:

- (a) a nucleic acid that encodes a far red shifted *Stichodactylidaen* chromoprotein or fluorescent mutant thereof;
- (b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and
- (c) a nucleic acid having a sequence of similarity of at least about 75% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27.

23. **(New)** An expression cassette comprising:

- (a) a transcriptional initiation region functional in an expression host;
- (b) a nucleic acid selected from the group consisting of the nucleic acids of:
 - (i) a nucleic acid that encodes a far red shifted *Stichodactylidaen* chromoprotein or fluorescent mutant thereof;
 - (ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and
 - (iii) a nucleic acid having a sequence of similarity of at least about 75% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27; and

(c) and a transcriptional termination region functional in said expression host.

24. **(New)** In an application that employs a nucleic acid encoding a chromo- or fluorescent protein, the improvement comprising:

employing a nucleic acid selected from the group consisting of:

- (i) a nucleic acid that encodes a far red shifted *Stichodactylidaen* chromoprotein or fluorescent mutant thereof;
- (ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and
- (iii) a nucleic acid having a sequence of similarity of at least about 75% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27.